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EXAMINER
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PATEL, JAYESH A

ART UNIT	PAPER NUMBER
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2624

NOTIFICATION DATE	DELIVERY MODE
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10/08/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,534	<b>Applicant(s)</b> TAKAMIDOH, KENYA	
	<b>Examiner</b> JAYESH A. PATEL	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Response to Arguments***

Applicant's arguments see remarks page 9-16, filed 06/09/2008, with respect to the rejection(s) of claim(s) 1-28 have been considered and are persuasive, however are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10, 14,16,19,21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable Blank (US. 5345313) hereafter Blank in view of Kinjo (US 5978100) hereafter Kinjo.

1. Regarding claim 1, Blank discloses a portrait image processing method in **(Fig 6)** comprising the steps of: extracting a portrait image from an original image including a person and a background **(Col 2 Lines 60-68 by extracting the portions inside and outside of the edge thereby extracting the portrait from the background and Col 9 Lines 3-8)**; compositing the extracted portrait image and a background image prepared in advance **(integrating into a preselected background )** to create a composite image at **(Col 3 Lines 56-67)**; detecting a

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boundary of the person and the background from the original image at **(Col 2 Lines 60-67, Col 9 Lines 3-14 and Col 8 Lines 44-49)**; and applying correction processing to a boundary part which is judged not to be a true contour of the person **(Col 4 Lines 28-33 where the correction is applied to the object (which has a boundary) and the background as seen in the fig7C)**, for concealing the boundary part **(contiguous to the edge)** in the created composite image at **(Col 4 Lines 17-27, Col 9 Lines 36-45 and Figs 5d-5e)**. Blank discloses detecting the contour of a person as seen in Figs **(5A-5E)** and **(7A-7d)**. Blank is silent and however does not expressly recite determining a level of certainty as to whether or not the detected boundary is a true contour of the person for each part of the detected boundary.

Kinjo discloses determining a level of certainty as to whether or not the detected boundary is a true contour of the person for each part of the boundary at **(Kinjo discloses extracting the shape corresponding to the principal region i.e face of the person and eliminates the region corresponding to the background Col 9 lines 29-39 and Col 18 Lines 10-20, Col 18 lines 53-65 where each portion of the non-background (face of the human) region is extracted (detected) due to the determination of the each region being the background region. The level of certainty is determined by the regions overall weighting coefficient. The region with the highest score is the region having the highest probability of being a face (contour of a person) of the human figure (level of certainty at col 21 lines 15-40). Thus the level**

**of certainty is determined for each face candidate region including the boundary or contour as seen in (Figs 5A-5C). Col 20 lines 3-67 explain the weightings concept in the determination of the probability of the face and the background regions. The probability of coincidence with the actual face is low (low level) at Col 20 lines 60-67).** Kinjo discloses that the method and apparatus as disclosed improves the probability of determining the portions of the images **(i.e the contour of the person and the background)** due to a subsequent extraction in another method and as such compensating for the errors **(i.e. accurate or error free extraction of the principal portions of the images at Col 2 lines 56-67).** Kinjo and Blank are from the same field of endeavor and are analogous art therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Kinjo **(accurately determining the principal portions of the images by improving the probability (i.e level of certainty) as explained above)** in the method and apparatus of Blank for the above reasons.

**2.** Regarding Claim 2, Blank and Kinjo discloses the portrait image processing method according to claim 1. Blank further disclose wherein said correction processing is image processing for overwriting **(making transparent background)** another image on the boundary part which is judged not to be the true contour of the person at **(Fig 5d-5e, Col 3 Lines 35-42 and Col 8 Lines 44-68).** The process of further blending at **(Col 4 Lines 21-27)** the object in to the

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pre-selected image, the processor averages the hue of edge of the object and the hue of the portion of the pre selected background that is **(contiguous to the edge)**. The averaging of the pixels will be overwriting the boundary part, which is judged not to be a true contour of the person.

3. Regarding Claim 3, Blank and Kinjo discloses the portrait image processing method according to claim 1. Blank further disclose wherein said correction processing is image processing for shifting the portrait image such that the boundary part, which is judged not to be the true contour of the person, is outside a frame of the composite image at **(Fig 7a-7d and Col 12 Lines 53-68 through Col 13 Lines 1-34)**. Blank also discloses in Fig 7c the portion 66, which is judged not to be the true edge **(background portion near the edge)** is shifted **(changed by blending or removing and hence the background portion near the edge is no longer present in the image and is out of the image frame)** in Fig 7d. Blank also discloses the fact at **(Col 4 Lines 8-33)**.

4. Claim 4 is a corresponding apparatus claim of a method of Claim 1. See the explanation of Claim 1. Blank further discloses the apparatus in **(Figs 1, 2 and 3)**.

5. Claim 5 is a corresponding apparatus claim of a method of Claim 2. See the explanation of Claim 2. Blank further discloses the apparatus in **(Figs 1,2 and 3)**.

6. Claim 6 is a corresponding apparatus claim of a method of Claim 3. See the explanation of Claim 3. Blank further discloses the apparatus in **(Figs 1,2 and 3)**.

7. Regarding Claim 10, Blank and Kinjo discloses the portrait image processing method according to claim 1. Blank further discloses wherein said background is arbitrary in **(Col 6 Lines 18-20)**.

8. Regarding claim 14, Blank and Kinjo discloses the portrait image processing method according to claim 1. Kinjo disclose further wherein said determining step determines whether a boundary part of the detected boundary is a boundary part with high certainty as a contour of the person, **or** whether or a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person at **(Col 20 lines 42-67 where the high probability of the contour of a person (face) has highest weights and the background or the non-face (boundary part with Low certainty has low probability)**.

9. Claim 16 is a corresponding apparatus claim of claim 10. See the explanation of claim 10.

10. Claim 19 is a corresponding apparatus claim of claim 14. See the explanation of claim 14.

**11.** Regarding claim 21, Blank and Kinjo discloses the portrait image processing method according to claim 1. Blank discloses the extraction of the portrait image of a person **(which includes facial parts)** however is silent and does not expressly recite extracting facial parts. Kinjo disclose wherein said extracting step is performed for extracting facial parts **(Figs 5A-5C where the extraction of the facial region including the parts is shown)**.

**12.** Claim 23 is a corresponding apparatus claim of claim 21. See the explanation of claim 21.

Claims 7- 9, 22, 24 - 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank (US. 5577179) hereafter 5577179 in view of Kinjo.

**13.** Regarding Claim 7, 5577179 discloses a portrait image processing method, said method comprising: extracting a portrait image from an original image including a person and a background **(Col 3 Lines 54-67 where the object and the background are extracted)**; compositing the extracted portrait image with a background image prepared in advance **(Col 4 Lines 59-64 combining the extracted image with the preselected image (background))** to create a composite image; detecting a boundary of the person in the original image **(Col 3 Lines 63-67 detecting the edge of the object is the boundary of the person**



**in the original image**); and applying correction processing (**blend operation**) for concealing the boundary part in the created composite image at **(Col 16 Lines 50-53, Col 17 Lines 4 and 23)**. According to 5577179 in **(Col 16 Lines 50-53)** where the “background layer directly below the object layer” is a low certainty boundary part as a true contour of a person (object layer). 5577179 is silent and however does not expressly recite identifying in the detected boundary, a boundary part representing a contour of the person with low certainty. Kinjo discloses identifying in the detected boundary, a boundary part representing a contour of the person with low certainty at **(Kinjo discloses extracting the shape corresponding to the principal region i.e face of the person and eliminates the region corresponding to the background Col 9 lines 29-39 and Col 18 Lines 10-20, Col 18 lines 53-65 where each portion of the non-background (face of the human) region is extracted (detected) due to the determination of the each region being the background region. The level of certainty is determined by the regions overall weighting coefficient. The region with the highest score is the region having the highest probability of being a face (contour of a person) of the human figure (level of certainty at col 21 lines 15-40. Thus the level of certainty is determined for each face candidate region including the boundary or contour as seen in (Figs 5A-5C). Col 20 lines 3-67 explain the weightings concept in the determination of the probability of the face and the background regions)**. Kinjo discloses that the method and apparatus as disclosed improves the probability of

determining the portions of the images (**i.e the contour of the person and the background**) due to a subsequent extraction in another method and as such compensating for the errors (**i.e. accurate or error free extraction of the principal portions of the images at Col 2 lines 56-67**). Kinjo and 5577179 are from the same field of endeavor and are analogous art therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Kinjo (**accurately determining the principal portions of the images by improving the probability (i.e level of certainty) as explained above**) in the method and apparatus of 5577179 for the above reasons.

**14.** Regarding Claim 8, 5577179 and Kinjo discloses the portrait image processing method according to claim 7. 5577179 further disclose wherein said correction processing is image processing for overwriting the boundary part with another image at (**Col 16 Lines 58-63**). The computer sets the transparency or opacity (**overwriting with another image**) of each of the three object pixels according to the blend factor.

**15.** Regarding Claim 9, 5577179 and Kinjo discloses the portrait image processing method according to claim 7. 5577179 further disclose wherein said correction processing is image processing for shifting the portrait image such that the boundary part is outside a frame of the composite image at (**Col 16 Lines 58-**

**63).** The computer sets the transparency or opacity (**overwriting with another image**) of each of the three object pixels according to the blend factor.

**16.** Regarding Claim 25, 5577179 and Kinjo disclose the portrait image processing method according to claim 7. 5577179 further disclose wherein said extracting step is performed for extracting facial parts (**Col 14 Lines 60-63 and Col 15 Lines 39-43**). Kinjo discloses extracting the shape corresponding to the principal region i.e face of the person and eliminates the region corresponding to the background Col 9 lines 29-39 and Col 18 Lines 10-20, Col 18 lines 53-65 where each portion of the non-background (face of the human) region is extracted (detected) due to the determination of the each region being the background region.

**17.** Claim 26 is a corresponding method Claim as in claim 7. See the explanation of Claim 7 and Kinjo further discloses wherein a boundary part representing a contour of the person with low certainty corresponds to a boundary part which is out of a range of a reference contour line at (**Col 20 lines 3-67, table 1 where the region with the highest score is the region having the highest probability of being a face (contour of a person) of the human figure level of certainty at Col 21 lines 15-40 and the non-face region (reference contour line or background region closest to the face boundary) has the low certainty and the weightings are greater than the background (actual**

**background away from the actual face contour) which has the lowest certainty of being an actual contour of the face (person) at Col 20 lines 42-59). Thus the level of certainty is determined for each face candidate region including the boundary or contour as seen in (Figs 5A-5C).** Thus the non-face region is a reference contour line for the actual boundary **(background)** and is out of range **(weightings distance away from the face contour).**

**18.** Claim 22 is a corresponding method claim of claim 26. see the explanation of claim 26.

**19.** Claim 24 is a corresponding apparatus claim of claim 26. see the explanation of claim 26.

Claim 11-12, 17-18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Blank in view of Kinjo and in further view of 5577179.

**20.** Regarding Claim 11, Blank and Kinjo discloses the portrait image processing method according to claim 1. Kinjo discloses the level of certainty of facial parts at **(Figs 5A-5C where face candidates are extracted).** Blank discloses the extraction of an object which is a human being, however is silent and does not expressly recite wherein said extracting step extracts facial parts from the original image, the facial parts including at least one of eyes, nose and mouth. 5577179 at **(Col 14 lines 60-63)** disclose where the file header contains the information

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regarding the location of the eyes, which is used for extraction. 5577179 further discloses that such a digital image editing system can automatically size, position, layer the digital image of a replacement object or multiple objects into a predetermined background at a desired depth, match, produce a pleasing appearance, easy to implement and cost effective to use at **(Col 3 Lines 23 and 41-48)**. Blank, Kinjo and 5577179 are from the same field of endeavor and are analogous art, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of 5577179 in the image editing system of Blank and Kinjo for the above reasons.

**21.** Regarding Claim 12, Blank and Kinjo discloses the portrait image processing method according to claim 1. Kinjo discloses the degree of certainty using the weight score **(positional relationship Col 20 lines 3-67)** between the facial parts and the background. Kinjo further discloses the positional relationship in the extraction of the face **(i.e detecting the boundary and the background at col 18 lines 17-18)**. 5577179 also further disclose wherein said step of detecting a boundary uses an average positional relationship **(by proportionately sizing up or down which is averaging the position between the up and the down Col 15 lines 17-20)** between a position of a facial part and a boundary of a person and a background, to detect the boundary at **(Figs 4e, 4f, 4g and Col 14 Lines 38-57 and Col 15 Lines 5-23)**. 5577179 use the positional relation between the **(facial parts eyes, neck)**, the edge of the person **(object)** and the background

person **(background in the present context)** to detect the boundary as shown in the figures.

**22.** Claim 17 is a corresponding apparatus claim of claim 11. See the explanation of claim 11.

**23.** Claim 18 is a corresponding apparatus claim of claim 12. See the explanation of claim 12.

Claims 13 , 15 , 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank in view of Kinjo and in further view of Lee (US 20030058939) hereafter Lee.

**24.** Regarding Claim 13, Blank and Kinjo discloses the portrait image processing method according to claim 1. Blank discloses extraction of a person from the background as seen in **(Figs 7A-7D)**. Kinjo discloses the degree of certainty based on the weight score between the face area and the background **(at Col 20 Lines 3-67)**. Blank and Kinjo are silent and does not expressly recite wherein said extracting step extracts a skin color in the original image, sequentially applies area extension to connected areas, from a point of a skin color area, extracts a face area based on a shape of a face, and extracts a hair area above

the face area, and/or a neck and chest area below the face area, to extract the portrait image.

Lee discloses wherein said extracting step extracts a skin color in the original image, sequentially applies area extension to connected areas, from a point of a skin color area, extracts a face area based on a shape of a face, and extracts a hair area above the face area, and/or a neck and chest area below the face area, to extract the portrait image. Lee in **(Fig 7 and 8)** discloses the face extraction and gridding of skin color for the extraction. Lee at **(Page 1 Para 15-17)** discloses a precise technique of facial extraction. Lee further discloses the extraction of facial parts and a general region of the human being which would include the portions such as hair chest etc at **(Page 4 Para 0061)**. Blank, Kinjo and Lee are from analogous art and are from the same field of endeavor, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Kinjo and Lee in the system and process of Blank for the above reasons.

**25.** Regarding claim 15, Blank and Kinjo disclose the portrait image processing method according to claim 14. Kinjo further discloses wherein a boundary part with low certainty is one of a boundary part where a length between coordinate points on the boundary is partially larger than a decided value (precondition), due to unevenness of the boundary at **(at Col 20 Lines 3-67 where the weight**

**score is decided based on the precondition to decide the boundary part of the contours of a person and the background).** Kinjo discloses the extraction of the facial candidates **(which includes the skin color as seen figs 5a-5C).** Kinjo is silent and however does not expressly recite only for a person however Lee discloses the database of range of several people facial skin colors **(Page 1 Para 0015)** which would be obvious to use for more persons as claimed in claim 15.

**26.** Regarding Claim 20, Blank and Kinjo disclose the portrait image processing apparatus according to claim 19. Kinjo further discloses wherein a boundary part with low certainty is one of a boundary part where a length between coordinate points on the boundary is partially larger than a decided value (precondition value), due to unevenness of the boundary at **(at Col 20 Lines 3-67 where the weight score is decided based on the precondition to decide the boundary part of the contours of a person and the background).** Kinjo is silent and however does not expressly recite only for a person however Lee discloses the database of range of several people facial skin colors **(Page 1 Para 0015)** which would be obvious to use for more persons as claimed in claim 20.

Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank in view of Kinjo and in further view of Schindler (US 5630037) hereafter Schindler.



27. Regarding claim 27, Blank and Kinjo disclose the portrait image processing method according to claim 1. Blank discloses wherein said step of applying correction processing **(Col 4 Lines 28-33 where the correction is applied to the object (which has a boundary) and the background as seen in the fig7C)**, for concealing the boundary part **(part contiguous to the edge)** in the created composite image at **(Col 4 Lines 17-27, Col 9 Lines 36-45 and Figs 5d-5e)**. Blank discloses detecting the contour of a person as seen in Figs **(5A-5E)** and **(7A-7d)**. Kinjo discloses detecting the boundary part representing the contour of the person with low certainty **(probability of coincidence with the actual face or contour is low at Col 20 Lines 60-67)**, however Blank and Kinjo are silent and do not expressly recite wherein said step of applying correction processing is performed only for a boundary part representing a contour of the person with low certainty.

Schindler discloses applying correction processing is performed only for a boundary part representing a contour of the person with low certainty **(Schindler discloses segmenting the image into foreground, background and fringe pixels located near the foreground (boundary part with low certainty of being an actual contour of the object) at Col 2 Lines 43-45 and further discloses touching up (correcting) the fringe regions of the extracted image into the composite image at (Col 2 lines 53-57))**. Schindler discloses the method and apparatus which is fast and efficient for composition of

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foreground against an arbitrary background and touching up the subject borders (fringe pixels) at **(Col 2 lines 4-24)**. Blank, Kinjo and Schindler are from the same field of endeavor and are analogous art, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of fast and efficient composition and correction of fringe pixels in the method of blank and Kinjo for the above reasons.

**28.** Claim 28 is a corresponding apparatus claim of claim 27. See the explanation of claim 27.

***Other cited prior art***

The other cited prior art made of record but not relied on are (US 5471535), (US 7091993) and (US 6122014).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAYESH A. PATEL whose telephone number is (571)270-1227. The examiner can normally be reached on M-F 7.00am to 4.30 pm (5-4-9). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/01/08

/Jayesh A Patel/  
Examiner, Art Unit 2624

/Jingge Wu/  
Supervisory Patent Examiner, Art Unit 2624